This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) Method for supporting a 6to4 tunneling protocol across a network address translation mechanism comprising the steps of :

- receiving from a first network an outbound IPv6 packet encapsulated into an IPv4 packet, the IPv4 packet comprising a IPv4 header with a private IPv4 source address, the outbound IPv6 packet comprising a IPv6 header with a 6to4 source address, the IPv6 header comprising an Interface ID value;
- translating the private IPv4 source address in the IPv4 header ~~of the outbound packet~~ into a public IPv4 source address,
- transmitting the translated packet over ~~the~~ an IPv4 network;

further comprising the step of:

- storing an association of the private IPv4 source address and the Interface ID value of the 6to4 source address for opposite address translation of inbound packets.

2. (Currently Amended) Method according to claim 1, further comprising the steps of:

- receiving an inbound packet over the IPv4 network;
- determining whether the inbound packet encapsulates an IPv6 packet;
- in the affirmative, retrieving the Interface ID of ~~the~~ an encapsulated IPv6 packet's destination address, and using the Interface ID to retrieve ~~the~~ a corresponding stored private IPv4 address, and updating the destination address in the IPv4 header accordingly;
- forwarding the modified, encapsulated IPv6 ~~6to4~~ packet on the first network.

3. (Currently Amended) Method according to claim 1, further comprising the step of:

- changing the private IPv4 address ~~part~~ of the 6to4 source address in the IPv6 header of an outbound packet to the public IPv4 address; and

- changing the public IPv4 address ~~part~~ of the 6to4 destination address of an inbound packet to ~~the~~ a corresponding private IPv4 address.

4. (Original) Method according to claim 3, comprising the step of modifying fields at least of the IPv4 header, such as checksums, whose values depend on the 6to4 source address.

5. (Currently Amended) Method according to claim 2, wherein the step of storing the association of the Interface ID and ~~the~~ a source address of the ~~6to4~~ encapsulated IPv6 packets of the first network and the step of modifying the destination address of inbound packets or the source address of outbound packets as a function of the Interface ID is carried out by an application level gateway assisting the network address translation mechanism.

6. (Previously Presented) Method according to claim 3, wherein the step of changing the IPv4 part of the 6to4 address are carried out by an application level gateway assisting the network address translation mechanism.

7. (Previously Presented) Device for supporting a 6to4 tunneling protocol across a network address translation mechanism, comprising:

- a network address translation mechanism for changing the private source address of an outbound IPv4 packet encapsulating an IPv6 packet into a public source address;

further comprising an application for storing the private IPv4 addresses included in the 6to4 source address of a host of the IPv6 network, for outbound packets; and for updating the 6to4 destination address of an inbound packet with a stored private IPv4 address having same Interface ID as the 6to4 destination address.

8. (Original) Device according to claim 7, wherein the application is further adapted to carry out additional processing of an outbound packet, wherein the additional processing consists in replacing the private IPv4 address part of an 6to4 source address of an outbound packet with the device's public IPv4 address.